

APPLICANT(S): MOUTSATSOS, Ioannis et al.
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AMENDMENTS TO THE CLAIMS

Please add or amend the claims to read as follows, and cancel without prejudice or disclaimer to resubmission in a divisional or continuation application claims indicated as cancelled:

1-23. Cancelled.

24. (Previously Presented) A method of inducing organized, functional bone formation at a site of bone infirmity in a human, comprising the steps of:

- (a) transforming a cultured mesenchymal stem cell with a DNA encoding human bone morphogenic protein 2 (BMP-2);
- (b) culturing the cultured mesenchymal stem cell transformed in step (a), under conditions enabling expression of said DNA encoding bone morphogenic protein 2; and
- (c) implanting said cultured mesenchymal stem cell in the absence of an exogenously supplied osteoinductive matrix at a site of bone infirmity,

whereby autocrine and paracrine effects of expressed human bone morphogenic protein 2 at said site of bone infirmity result in organized, functional bone formation, thereby inducing organized, functional bone formation at a site of bone infirmity.

25. (Previously Presented) The method of claim 24, wherein said mesenchymal stem cell is a primary cell.

26. (Previously Presented) The method of claim 24, wherein said mesenchymal stem cell is a cultured cell line.

27. (Previously Presented) The method of claim 24, wherein said mesenchymal stem cell expresses an endogenous bone morphogenic protein receptor.

28. (Previously Presented) The method of claim 24, wherein said mesenchymal stem cell expresses parathyroid hormone and a parathyroid hormone receptor protein.

29. (Cancelled)